We Claim:

1. A myostatin peptide consisting of about 3 to about 100 amino acids, said peptide comprising at least one epitope of myostatin.

2. The myostatin peptide of claim 1, wherein said myostatin peptide consists of about 3 to about 30 amino acids.

3. The myostatin peptide of claim 1, wherein said myostatin peptide consists of about 3 to about 15 amino acids.

4. The myostatin peptide of claim 1, wherein said myostatin peptide is derived from the region of myostatin spanning amino acids 45 through 376, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36).

5. The myostatin peptide of claim 2, wherein said myostatin peptide is derived from the region of myostatin spanning amino acids 45 through 376, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36).

6. The myostatin peptide of claim 4, wherein said myostatin peptide is derived from the region of myostatin spanning amino acids 235 through 376, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36).

7. The myostatin peptide of claim 4, wherein said myostatin peptide has at least about 75% amino acid identity to a peptide comprising an amino acid sequence selected from the group consisting of amino acids 3-18, inclusive of SEQ ID NO:4; amino acids 3-15, inclusive of SEQ ID NO:6; amino acids 3-17, inclusive, of SEQ ID NO:8;

amino acids 3-16, inclusive of SEQ ID NO:10; amino acids 3-22, inclusive of SEQ ID NO:12; amino acids 3-25, inclusive of SEQ ID NO:14; amino acids 3-22, inclusive of SEQ ID NO:16; amino acids 3-18, inclusive of SEQ ID NO:20; and amino acids 3-18, inclusive, of SEQ ID NO:22.

8. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-18, inclusive, of SEQ ID NO:4.

9. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-15, inclusive, of SEQ ID NO:6.

10. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-17, inclusive, of SEQ ID NO:8.

11. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-16, inclusive, of SEQ ID NO:10.

12. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-22, inclusive, of SEQ ID NO:12.

13. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-25, inclusive, of SEQ ID NO:14.

14. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-22, inclusive, of SEQ ID NO:16.

15. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-18, inclusive, of SEQ ID NO:20.

16. The myostatin peptide of claim 7, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-18, inclusive of SEQ ID NO:22.

17. The myostatin peptide of claim 1, wherein said myostatin peptide comprises the amino acid sequence Lys-Arg-Ser-Arg-Arg-Asp (SEQ ID NO:37).

18. The myostatin peptide of claim 2, wherein said myostatin peptide comprises the amino acid sequence Lys-Arg-Ser-Arg-Arg-Asp (SEQ ID NO:37).

19. The myostatin peptide of claim 1, wherein said myostatin peptide comprises the amino acid sequence Lys-Glu-Asn-Val-Glu-Lys-Glu (SEQ ID NO:38).

20. The myostatin peptide of claim 2, wherein said myostatin peptide comprises the amino acid sequence Lys-Glu-Asn-Val-Glu-Lys-Glu (SEQ ID NO:38).

21. The myostatin peptide of claim 1, wherein said myostatin peptide comprises the amino acid sequence Ser-Leu-Lys-Asp-Asp-Asp (SEQ ID NO:39).

22. The myostatin peptide of claim 2, wherein said myostatin peptide comprises the amino acid sequence Ser-Leu-Lys-Asp-Asp-Asp (SEQ ID NO:39).

23. A myostatin peptide consisting of about 3 to about 200 amino acids, said peptide comprising at least one epitope of myostatin, wherein said peptide is

derived from a region of myostatin selected from the group consisting of the region of myostatin spanning amino acids 1 through 350, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 1 through 275, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 25 through 300, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 50 through 325, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); and the region of myostatin spanning amino acids 75 through 350, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36).

24. The myostatin peptide of claim 23, wherein said myostatin peptide consists of about 3 to about 30 amino acids.

25. The myostatin peptide of claim 23, wherein said myostatin peptide consists of about 3 to about 15 amino acids.

26. The myostatin peptide of claim 23, wherein said myostatin peptide comprises the amino acid sequence of amino acids 3-19, inclusive, of SEQ ID NO:18.

27. The myostatin peptide of claim 23, wherein said myostatin peptide comprises the amino acid sequence Lys-Arg-Ser-Arg-Arg-Asp (SEQ ID NO:37).

28. The myostatin peptide of claim 24, wherein said myostatin peptide comprises the amino acid sequence Lys-Arg-Ser-Arg-Arg-Asp (SEQ ID NO:37).

29. The myostatin peptide of claim 23, wherein said myostatin peptide comprises the amino acid sequence Lys-Glu-Asn-Val-Glu-Lys-Glu (SEQ ID NO:38).

30. The myostatin peptide of claim 24, wherein said myostatin peptide comprises the amino acid sequence Lys-Glu-Asn-Val-Glu-Lys-Glu (SEQ ID NO:38).

31. The myostatin peptide of claim 23, wherein said myostatin peptide comprises the amino acid sequence Ser-Leu-Lys-Asp-Asp-Asp (SEQ ID NO:39).

32. The myostatin peptide of claim 24, wherein said myostatin peptide comprises the amino acid sequence Ser-Leu-Lys-Asp-Asp-Asp (SEQ ID NO:39).

33. A myostatin multimer comprising two or more selected myostatin immunogens, wherein each of said myostatin immunogens independently comprises at least 3 amino acids defining at least one epitope of myostatin.

34. The myostatin multimer of claim 33, wherein each of said selected myostatin immunogens independently consists of about 3 to about 200 amino acids and comprises at least one epitope of myostatin.

35. The myostatin multimer of claim 33, wherein each of said selected myostatin immunogens independently consists of about 3 to about 100 amino acids and comprises at least one epitope of myostatin.

36. The myostatin multimer of claim 33, wherein each of said selected myostatin immunogens independently consists of about 3 to about 30 amino acids and comprises at least one epitope of myostatin.

37. The myostatin multimer of claim 33, wherein each of said selected myostatin immunogens independently consists of about 3 to about 15 amino acids and comprises at least one epitope of myostatin.

38. The myostatin multimer of claim 33, wherein each of said selected myostatin immunogens is independently derived from a region of myostatin selected from the group consisting of the region of myostatin spanning amino acids 100 through 376, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 235 through 376, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 1 through 376, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 1 through 350, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 1 through 275, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 25 through 300, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); the region of myostatin spanning amino acids 50 through 325, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36); and the region of myostatin spanning amino acids 75 through 350, inclusive, of Figures 1A-1D (SEQ ID NOS:27-36).

39. The myostatin multimer of claim 33, wherein each of said selected myostatin immunogens independently has at least about 75% amino acid identity to a peptide comprising an amino acid sequence selected from the group consisting of amino acids 3-18, inclusive of SEQ ID NO:4; amino acids 3-15, inclusive of SEQ ID NO:6; amino acids 3-17, inclusive, of SEQ ID NO:8; amino acids 3-16, inclusive of SEQ ID NO:10; amino acids 3-22, inclusive of SEQ ID NO:12; amino acids 3-25, inclusive of

SEQ ID NO:14; amino acids 3-22, inclusive of SEQ ID NO:16; amino acids 3-19, inclusive, of SEQ ID NO:18; amino acids 3-18, inclusive of SEQ ID NO:20; and amino acids 3-18, inclusive, of SEQ ID NO:22.

40. The myostatin multimer of claim 33, wherein at least one of said selected myostatin immunogens comprises the amino acid sequence Lys-Arg-Ser-Arg-Arg-Asp (SEQ ID NO:37).

41. The myostatin multimer of claim 34, wherein at least one of said selected myostatin immunogens comprises the amino acid sequence Lys-Arg-Ser-Arg-Arg-Asp (SEQ ID NO:37).

42. The myostatin multimer of claim 33, wherein at least one of said selected myostatin immunogens comprises the amino acid sequence Lys-Glu-Asn-Val-Glu-Lys-Glu (SEQ ID NO:38).

43. The myostatin multimer of claim 34, wherein at least one of said selected myostatin immunogens comprises the amino acid sequence Lys-Glu-Asn-Val-Glu-Lys-Glu (SEQ ID NO:38).

44. The myostatin multimer of claim 33, wherein at least one of said selected myostatin immunogens comprises the amino acid sequence Ser-Leu-Lys-Asp-Asp-Asp (SEQ ID NO:39).

45. The myostatin multimer of claim 34, wherein at least one of said selected myostatin immunogens comprises the amino acid sequence Ser-Leu-Lys-Asp-Asp-Asp (SEQ ID NO:39).

46. The myostatin multimer of claim 33, wherein said multimer comprises a molecule according to the general formula (MP-X-MP)y, wherein MP is a myostatin peptide, X is selected from the group consisting of a peptide linkage, an amino acid spacer group, a leukotoxin polypeptide and $[MP]_n$, where n is greater than or equal to 1, and y is greater than or equal to 1.

47. The myostatin multimer of claim 46, wherein X comprises an amino acid spacer group including at least one helper T-cell epitope.

48. The myostatin multimer of claim 46, wherein the myostatin peptides present in the multimer are the same.

49. The myostatin multimer of claim 46, wherein the myostatin peptides present in the multimer are different.

50. A myostatin immunoconjugate comprising at least one myostatin peptide according to claim 1, linked to an immunological carrier.

51. A myostatin immunoconjugate comprising at least one myostatin peptide according to claim 7, linked to an immunological carrier.

52. A myostatin immunoconjugate comprising at least one myostatin peptide according to claim 23, linked to an immunological carrier.

53. A myostatin immunoconjugate comprising at least one myostatin multimer according to claim 33, linked to an immunological carrier.

54. The myostatin immunoconjugate of claim 50, wherein the immunological carrier is a leukotoxin polypeptide.

55. The myostatin immunoconjugate of claim 51, wherein the immunological carrier is a leukotoxin polypeptide.

56. The myostatin immunoconjugate of claim 52, wherein the immunological carrier is a leukotoxin polypeptide.

57. The myostatin immunoconjugate of claim 53, wherein the immunological carrier is a leukotoxin polypeptide.

58. A vaccine composition comprising a myostatin peptide according to of claim 1 and a pharmaceutically acceptable excipient.

59. A vaccine composition comprising a myostatin peptide according to of claim 7 and a pharmaceutically acceptable excipient.

60. A vaccine composition comprising a myostatin peptide according to of claim 23 and a pharmaceutically acceptable excipient.

61. A vaccine composition comprising a myostatin multimer according to claim 33 and a pharmaceutically acceptable excipient.

62. A vaccine composition comprising a myostatin immunoconjugate according to claim 50 and a pharmaceutically acceptable excipient.

63. A vaccine composition comprising a myostatin immunoconjugate according to claim 51 and a pharmaceutically acceptable excipient.

64. A vaccine composition comprising a myostatin immunoconjugate according to claim 52 and a pharmaceutically acceptable excipient.

65. A vaccine composition comprising a myostatin immunoconjugate according to claim 53 and a pharmaceutically acceptable excipient.

66. The vaccine composition of claim 58, further comprising an adjuvant.

67. The vaccine composition of claim 59, further comprising an adjuvant.

68. The vaccine composition of claim 60, further comprising an adjuvant.

69. The vaccine composition of claim 61, further comprising an adjuvant.

70. The vaccine composition of claim 62, further comprising an adjuvant.

71. The vaccine composition of claim 63, further comprising an adjuvant.

72. The vaccine composition of claim 64, further comprising an adjuvant.

73. The vaccine composition of claim 65, further comprising an adjuvant.

74. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 58 to said vertebrate subject.

75. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 59 to said vertebrate subject.

76. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 60 to said vertebrate subject.

77. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 61 to said vertebrate subject.

78. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 62 to said vertebrate subject.

79. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 63 to said vertebrate subject.

80. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 64 to said vertebrate subject.

81. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the vaccine composition of claim 65 to said vertebrate subject.

82. The method of claim 74, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;
(b) an increase in muscle mass;
(c) an increase in the number of muscle cells;
(d) an increase in the size of muscle cells;
(e) a reduction in body fat content;
(f) an increase in muscle strength;
(g) an increase in mammary gland tissue;
(h) an increase in lactation;
(i) an increase in appetite or feed uptake; or
(j) an increase in the life span of the vertebrate subject.

83. The method of claim 75, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;
(b) an increase in muscle mass;
(c) an increase in the number of muscle cells;
(d) an increase in the size of muscle cells;
(e) a reduction in body fat content;
(f) an increase in muscle strength;
(g) an increase in mammary gland tissue;
(h) an increase in lactation;
(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

84. The method of claim 76, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;
(b) an increase in muscle mass;
(c) an increase in the number of muscle cells;
(d) an increase in the size of muscle cells;
(e) a reduction in body fat content;
(f) an increase in muscle strength;
(g) an increase in mammary gland tissue;
(h) an increase in lactation;
(i) an increase in appetite or feed uptake; or
(j) an increase in the life span of the vertebrate subject.

85. The method of claim 77, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;
(b) an increase in muscle mass;
(c) an increase in the number of muscle cells;
(d) an increase in the size of muscle cells;
(e) a reduction in body fat content;
(f) an increase in muscle strength;
(g) an increase in mammary gland tissue;
(h) an increase in lactation;
(i) an increase in appetite or feed uptake; or
(j) an increase in the life span of the vertebrate subject.

86. The method of claim 78, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

87. The method of claim 79, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

88. The method of claim 80, wherein the immune response elicited reduces endogenous myostatin activity

in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

89. The method of claim 81, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

90. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 58 to said subject.

91. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 59 to said subject.

92. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 60 to said subject.

93. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 61 to said subject.

94. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 62 to said subject.

95. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 63 to said subject.

96. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 64 to said subject.

97. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the vaccine composition of claim 65 to said subject.

98. A method of modulating GDF11 activity in a vertebrate subject comprising administering the vaccine composition of claim 58 to said vertebrate subject.

99. A method of modulating GDF11 activity in a vertebrate subject comprising administering the vaccine composition of claim 60 to said vertebrate subject.

100. A method of modulating GDF11 activity in a vertebrate subject comprising administering the vaccine composition of claim 61 to said vertebrate subject.

101. A method of modulating GDF11 activity in a vertebrate subject comprising administering the vaccine composition of claim 62 to said vertebrate subject.

102. A method of modulating GDF11 activity in a vertebrate subject comprising administering the vaccine composition of claim 64 to said vertebrate subject.

103. A method of modulating GDF11 activity in a vertebrate subject comprising administering the vaccine composition of claim 65 to said vertebrate subject.

104. A polynucleotide encoding a myostatin peptide according to claim 1.

105. A polynucleotide encoding a myostatin peptide according to claim 7.

106. A polynucleotide encoding a myostatin peptide according to claim 23.

107. A polynucleotide encoding a myostatin multimer according to claim 33.

108. A polynucleotide encoding a myostatin immunoconjugate according to claim 50.

109. A polynucleotide encoding a myostatin immunoconjugate according to claim 51.

110. A polynucleotide encoding a myostatin immunoconjugate according to claim 52.

111. A recombinant vector comprising:

(a) a polynucleotide according to claim 104; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

112. A recombinant vector comprising:

(a) a polynucleotide according to claim 105; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

113. A recombinant vector comprising:

(a) a polynucleotide according to claim 106; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

114. A recombinant vector comprising:

(a) a polynucleotide according to claim 107; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

115. A recombinant vector comprising:

(a) a polynucleotide according to claim 108; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

116. A recombinant vector comprising:

(a) a polynucleotide according to claim 109; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

117. A recombinant vector comprising:

(a) a polynucleotide according to claim 110; and

(b) control elements that are operably linked to said polynucleotide whereby a coding sequence within said polynucleotide can be transcribed and translated in a host cell, and at least one of said control elements is heterologous to said coding sequence.

118. A host cell transformed with the recombinant vector of claim 111.

119. A host cell transformed with the recombinant vector of claim 112.

120. A host cell transformed with the recombinant vector of claim 113.

121. A host cell transformed with the recombinant vector of claim 114.

122. A host cell transformed with the recombinant vector of claim 115.

123. A host cell transformed with the recombinant vector of claim 116.

124. A host cell transformed with the recombinant vector of claim 117.

125. A method of producing a recombinant myostatin peptide comprising:

(a) providing a population of host cells according to claim 118; and

(b) culturing said population of cells under conditions whereby the myostatin peptide encoded by the coding sequence present in said recombinant vector is expressed.

126. A method of producing a recombinant myostatin multimer comprising:

(a) providing a population of host cells according to claim 119; and

(b) culturing said population of cells under conditions whereby the myostatin multimer encoded by the coding sequence present in said recombinant vector is expressed.

127. A method of producing a recombinant myostatin immunoconjugate comprising:

(a) providing a population of host cells according to claim 120; and

(b) culturing said population of cells under conditions whereby the myostatin multimer encoded by the coding sequence present in said recombinant vector is expressed.

128. A method of producing a recombinant myostatin peptide comprising:

(a) providing a population of host cells according to claim 121; and

(b) culturing said population of cells under conditions whereby the myostatin peptide encoded by the coding sequence present in said recombinant vector is expressed.

129. A method of producing a recombinant myostatin multimer comprising:

(a) providing a population of host cells according to claim 122; and

(b) culturing said population of cells under conditions whereby the myostatin multimer encoded by the coding sequence present in said recombinant vector is expressed.

130. A method of producing a recombinant myostatin immunoconjugate comprising:

(a) providing a population of host cells according to claim 123; and

(b) culturing said population of cells under conditions whereby the myostatin multimer encoded by the coding sequence present in said recombinant vector is expressed.

131. A method of producing a recombinant myostatin immunoconjugate comprising:

(a) providing a population of host cells according to claim 124; and

(b) culturing said population of cells under conditions whereby the myostatin multimer encoded by the coding sequence present in said recombinant vector is expressed.

132. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the polynucleotide of claim 104 to said vertebrate subject.

133. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the polynucleotide of claim 106 to said vertebrate subject.

134. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the polynucleotide of claim 107 to said vertebrate subject.

135. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the polynucleotide of claim 108 to said vertebrate subject.

136. A method of eliciting an immune response against a myostatin immunogen in a vertebrate subject, comprising administering the polynucleotide of claim 110 to said vertebrate subject.

137. The method of claim 132, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;
(b) an increase in muscle mass;
(c) an increase in the number of muscle cells;
(d) an increase in the size of muscle cells;
(e) a reduction in body fat content;
(f) an increase in muscle strength;
(g) an increase in mammary gland tissue;
(h) an increase in lactation;
(i) an increase in appetite or feed uptake; or
(j) an increase in the life span of the vertebrate subject.

138. The method of claim 133, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;
(b) an increase in muscle mass;
(c) an increase in the number of muscle cells;
(d) an increase in the size of muscle cells;
(e) a reduction in body fat content;
(f) an increase in muscle strength;
(g) an increase in mammary gland tissue;
(h) an increase in lactation;
(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

139. The method of claim 134, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

140. The method of claim 135, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

141. The method of claim 136, wherein the immune response elicited reduces endogenous myostatin activity in said vertebrate subject and results in at least one of the following biological effects:

(a) an increase in body weight;

(b) an increase in muscle mass;

(c) an increase in the number of muscle cells;

(d) an increase in the size of muscle cells;

(e) a reduction in body fat content;

(f) an increase in muscle strength;

(g) an increase in mammary gland tissue;

(h) an increase in lactation;

(i) an increase in appetite or feed uptake; or

(j) an increase in the life span of the vertebrate subject.

142. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the polynucleotide of claim 104 to said subject.

143. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the polynucleotide of claim 106 to said subject.

144. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the polynucleotide of claim 107 to said subject.

145. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the polynucleotide of claim 108 to said subject.

146. A method of treating a disorder which comprises degeneration or wasting of muscle in a vertebrate subject, said method comprising administering the polynucleotide of claim 110 to said subject.

147. An isolated antibody reactive with a myostatin peptide according to claim 1.